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ABSTRACT

Phonemic awareness and writing are thought to be important contributors to a child's success with reading. However, studies of "exceptional" children have shown contrary results. The Knowledge Sources theory is used to explain these results with regard to explicit and implicit generation procedures that have their source in the child's reading vocabulary and diverse instructional approaches. Phonemic Awareness appears to be necessary for spelling/writing, but it does not appear to be necessary for learning to read. Contains 33 references. (Author/RS)

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Phonemic Awareness and Writing: Overrated for Learning to read?

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Abstract

Phonemic awareness and writing are thought to be important contributors to a child's success with reading. However, studies of 'exceptional' children have shown contrary results. The Knowledge Sources theory is used to explain these results with regard to explicit and implicit generation procedures that have their source in the child's reading vocabulary and diverse instructional approaches.

Two aspects of literacy, phonemic awareness (PA) and writing, have been thought beneficial for learning to read an alphabetic script (Ehri, 1994). With regard to PA, many studies show that there is a positive correlation between skills associated with PA and reading (see Byrne, 1998 for a review). The nature of this relationship, however, has provoked considerable controversy. Tunmer (1991) has outlined three views: (1) PA is causally related to reading (Bradley & Bryant, 1983); (2) PA is an effect of learning to read (Morais, Cary, Alegria, & Bertelson, 1979); and (3) both claims (1 and 2) are accepted as reciprocal causation (Stanovich, 1986). Cossu, Rossini and Marshall (1993) suggest a fourth position in that the association is not causal, but may be the result of intellectual maturation (Liberman, Shankweiler, Liberman, Fowler, & Fisher, 1977). Other researchers, such as Perfetti, Beck, Bell, and Hughes (1987) maintain that some rudimentary phonological sensitivity but not PA is necessary for reading acquisition, and that reflective awareness as measured by PA tasks is developed through experience with print stimuli. Goswami and Bryant (1990) and Goswami (1993) are more specific in identifying onset and rime as the crucial phonological units that provide a basis for an analogy procedure for reading.

Interpretation of correlations is always problematic because of the unknown tertium quid, that is, the possibility of a third factor that makes the relationship between, in this instance, PA and reading spurious. In Frith's theory (1985) on the acquisition of reading, alphabetic (phonetic) spelling precedes alphabetic reading. Supporters of 'whole language' instruction also argue that children obtain a working knowledge of the alphabetic system from their writing practice (Smith & Elley, 1997, p. 44). Perin (1983) suggested that PA was related primarily to spelling ability, and others have shown that strong positive relationships do exist (e.g., Juel, Griffith, & Gough, 1986; Liberman, Rubin, Duques, & Carlisle, 1985).

A way to resolve some of these interpretive issues is to examine studies that are either longitudinal in design, or based on an intervention. Longitudinal studies take advantage of the reading instruction that is naturally occurring in the school in order to examine the nature of the developmental relationship between PA and reading. For example, Perfetti et al. (1987) conducted a longitudinal study of first grade children, and reported that the ability to read nonwords requiring phonological recoding occurred before progress in a standard PA deletion task. Blaklock (1993) reported similar findings for children taught to read by a 'whole language' instructional approach.

Intervention studies are based on the rationale that if PA is causally related to reading, then training PA before the commencement of reading instruction should be beneficial. Lundberg, Frost, and Peterson (1988) provided extensive phonological awareness training to Danish preschoolers and found that they were superior in reading and spelling to a control group that received no training 2 years later. Bradley & Bryant (1983, 1985) divided 65 six-year-old children with poor phonological awareness into 4 groups, one group received sound categorisation training, another group received sound categorisation plus letter-sound training, and the other groups were controls with either semantic classification training or no training. The group that received the combined training was over a year ahead of the others in reading and writing at the end of the training. These findings are reinforced by Cunningham (1990) in the United States, and Hatcher, Hulme, and Ellis (1994) in the United Kingdom, who conducted similar training studies with 5- to 7-year-old children and obtained comparable results.

The main points from the intervention and longitudinal studies are: (1) PA training by itself does not produce the same high level of performance gains on

reading that is achieved by training that makes explicit the relationship between spellings and sound patterns, and (2) PA develops after reading instruction. A certain caveat should be applied to the second conclusion, however, in so far as these findings do not eliminate the possibility of other forms of phonological awareness having an effect on reading, such as onset and rime as Goswami contends (1993). Together, they suggest a less deterministic view of PA with regard to reading.

It can be seen that resolving the controversy about the role of PA in reading has not proved an easy task in studies of normal children. Of no surprise, reading disabled children perform poorly on PA tasks (see, Stanovich, 1988 for a review). To the degree that PA ability reflects segmental restructuring, poorly specified phonological representations are considered a major factor underlying reading disability (Fowler, 1991). However, the evidence among other 'exceptional' groups does not support a claim for the necessity of PA in learning to read. For example, Sparks (1995) found that three hyperlexic children with low IQ had reading levels much higher than would be expected based on their PA scores. Cossu et al. also (1993) showed that some children with Down syndrome had learned to read as well as a group of 7-year-old controls despite minimal PA skills.

Although it would be expected that precocious readers would be highly adept at PA tasks, several large-scale studies of post-kindergarten precocious readers have reported that the correlations between PA and reading were either not significant or only modest (Backman, 1983; Patel & Patterson, 1982). A longitudinal study by Stainthorp & Hughes (1999) of 15 precocious readers with a reading age of 7-years upon entry into school at 5-years, had just as much difficulty in segmenting words as an able though non-reading age match. In addition, Fletcher-Flinn and Thompson (2000) reported a detailed case study of a very precocious reader, Maxine, who at 40

months had a reading age of 8-years 6 months but no PA beyond initial phonemes (onset). Furthermore, she only knew about half of her letter sounds and no digraphs, yet she was highly proficient at phonological decoding (reading nonwords), as well as having well-specified lexical representations. To account for their results, both Cossu et al. (1993) and Fletcher-Flinn and Thompson (2000) suggested a role for implicit phonological recoding and implicit knowledge of phoneme identities.

For the most part, writing skills develop in tandem with reading for normal progress children. It is, therefore, impossible to examine the relationship between PA and spelling without the confounding influence of reading and vice-versa. This question may need to be answered by examining 'exceptional' cases. Stainthorpe and Hughes (1999) reported that the precocious readers in their study showed a continuous asymmetry between their reading and writing skills. That is, although they read well beyond their years, they had difficulty with spelling and writing, especially during the first year of school. It was suggested that poor PA segmentation skills caused this difficulty. Case studies of precocious readers are consistent in reporting a spelling lag (Henderson, Jackson, & Mukamal, 1993; Pennington, Johnson, & Welsh, 1987) and Maxine's spelling was almost non-existent (Fletcher-Flinn & Thompson, 2000). These results are also compatible with several training studies that have shown little transfer between reading and spelling knowledge for 'whole language' taught 6-year-old normal progress readers (Thompson & Fletcher-Flinn, 1993) and groups of lower progress children having either 'phonics' or 'whole language' instruction (Thompson, 2000).

In summary, there is not much support for writing activities to support reading. However, PA appears to be necessary for spelling/writing because none of the precocious readers with only general phonological sensitivity progressed very far

in writing without it. In contrast, PA does not appear necessary for learning to read as some 'exceptional' children attain high levels of reading without well-developed PA segmentation skills. This latter conclusion seems to go against the general consensus for the causal role of PA in reading, however, another issue that should be considered is the reading instruction that children receive. According to Knowledge Sources theory (Thompson, 1999; Thompson & Fletcher-Flinn, 1993) generation of responses to unfamiliar words can be achieved through: (1) induced sublexical relations (ISRs) between orthographic components and corresponding phonological components, which are common to print words that the child has experienced, and (2) taught sounds of letters which are assembled sequentially for pronunciation. Children who experience 'phonics' instruction have both procedures available to them, but those who experience 'whole language' instruction only have use of the first.

Similar to other reading theories, Knowledge Sources theory considers phonemic awareness a necessary co-requisite, along with letter-sound knowledge for explicit phonological recoding - procedure (2), which may explain many of the results in the literature that show strong correlations between PA and reading. However, phonemic awareness skills are not necessary for lexicalised phonological recoding - procedure (1), as ISRs constitute implicit knowledge that is not available for conscious inspection. Implicit knowledge of phoneme identities is necessary for this latter case. Use of a lexicalised phonological procedure may explain minimal or lack of a relationship between PA and reading among precocious readers who are often mainly self-taught and read avidly. Phonological procedures are important for reading but the form they take may ultimately depend on the instruction that children receive, which, in turn, will affect the need for any co-requisites, such as PA and explicit letter-sound knowledge.

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